

# For comfort, mom's voice works as well as a hug

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"Reach out and touch someone" — good advertising slogan, or evolutionary imperative? How about both?

What Madison Avenue knew decades ago has been observed in [brain chemistry](#). A simple phone call from mom can calm frayed nerves by sparking the release of a powerful stress-quelling hormone, according to researchers at the University of Wisconsin-Madison.

Biological anthropologist Leslie Seltzer tested a group of seven- to 12-year-old girls with an impromptu speech and series of math problems in front of a panel of strangers, sending their hearts racing and levels of cortisol — a hormone associated with stress — soaring.

"Facing a challenge like that, being evaluated, raises stress levels for a lot of people," says Seth Pollak, [psychology](#) professor and director of UW-Madison's Child Emotion Lab.

Once stressed, one-third of the girls were comforted in person by their mothers — specifically with hugs, an arm around the shoulders and the like. One-third were left watch an emotion-neutral 75-minute video. The rest were handed a telephone. It was mom on the line, and the effect was dramatic.

"The children who got to interact with their mothers had virtually the same hormonal response, whether they interacted in person or over the phone," Seltzer says.

The girls' levels of [oxytocin](#), often called the "love hormone" and strongly associated with emotional bonding, rose significantly and the stress-marking cortisol washed away.

"It was understood that oxytocin release in the context of social bonding usually required physical contact," Seltzer says. "But it's clear from these results that a mother's voice can have the same effect as a hug, even if they're not standing there."

And the reprieve from stress or anxiety is a lasting one.

"It stays well beyond that [stressful task](#)," Pollak says. "By the time the children go home, they're still enjoying the benefits of this relief and their cortisol levels are still low."

The findings — which were published Wednesday in the journal *Proceedings of the Royal Society B* — square with a "tend and befriend" theory explaining how stress regulation may differ between males and females. Confronted with a threat, males may be more likely to choose between fight and flight. A female with offspring in tow or slowed by pregnancy, however, may have to make different choices.

"You might not be able to run with a child or defend yourself without endangering both of you," Seltzer said.

Instead, Seltzer explained, it might make more sense for a female to create or use a social bond to deal with a stressor — either through touch or soothing vocal communication.

"Apparently this hormone, oxytocin, reduces stress in females after both types of contact, and in doing so may strengthen bonds between individuals," she said.

From a modern perspective, the new understanding of oxytocin release helps explain the popularity of tearjerker long distance telephone commercials and shifts Pollak's reaction to his own students.

"For years I've seen students leaving exams and the first thing they do is pull out their cell phone and make a call," Pollak says. "I used to think, 'How could those over-attentive, helicopter parents encourage that?' But now? Maybe it's a quick and dirty way to feel better. It's not pop psychology or psychobabble."

"It's hard to get [cortisol](#) up. It's hard to get oxytocin up," he says. "That a simple telephone call could have this physiological effect on oxytocin is really exciting."

UW-Madison endocrinologist and study co-author Toni Ziegler developed with Seltzer a non-invasive test to measure oxytocin levels without inducing more [stress](#) in study subjects.

Seltzer has moved on to testing the oxytocin wake of other communication methods — like text messaging — and hopes to see the research spread out from human subjects

"It's not just us, of course. Lots of very social species vocalize," she says. "On the one hand, we're curious to see if this effect is unique to humans. On the other we're hoping researchers who study vocal communication will consider looking at oxytocin release in other animals and applying it to broader questions of social behavior and evolutionary biology."

Provided by University of Wisconsin-Madison

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